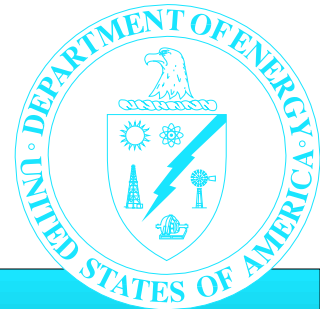


*Sandia National
Laboratories / New Mexico*

**Safeguards and
Security Profile
Summary Analysis**

June 1997



Office of Environment, Safety and Health

1.0

Introduction

The Department of Energy (DOE), Office of Environment, Safety and Health, conducted a review in June 1997 to determine the status of safeguards and security at Sandia National Laboratories/New Mexico (SNL/NM). This review was part of a recent initiative by the Assistant Secretary for Environment, Safety and Health to characterize the current status of safeguards and security programs throughout the Department. The Assistant Secretary for Environment, Safety and Health utilizes the Office of Oversight to provide the Secretary of Energy with independent assessments of the Department's performance in the areas of environmental protection, safety, health, and security. This document describes significant aspects of the safeguards and security posture at SNL/NM observed during the review.

2.0

Background

Location

SNL/NM occupies approximately 17,800 acres on Kirtland Air Force Base, 6.5 miles east of Albuquerque, New Mexico.

Mission

SNL/NM is a DOE multi-program national laboratory, chartered to work in partnership with universities and industry to enhance the security, prosperity, and well-being of the nation. Within this broad framework, SNL/NM is directly responsible to the DOE Office of Defense Programs to perform engineering development and systems integration work to support the U.S. nuclear weapons program.

Security Interests

SNL/NM security interests include large quantities of nuclear materials, most of which is highly enriched uranium. The primary storage area for this material is inside Technical Area V. Other

security interests on site include classified and sensitive information (in the form of documents, parts, and electronic media) and government property. Classified information holdings are substantial, numbering

over one million classified items and including a large number of documents classified Top Secret. Technical Area I contains most of the facilities in which classified information is processed or stored. Government property at SNL/NM includes one-of-a-kind testing facilities and equipment, including x-ray, gamma ray, and particle beam accelerators located in Technical Area IV.

Protection Strategy

SNL/NM has one facility that uses and stores especially sensitive nuclear materials that adversaries could use to initiate an event on site that could cause potentially serious health consequences to DOE workers and the public. Because of this threat, it is important that the safeguards and security system protecting this facility be capable of denying adversaries hands-on access to these materials. The nuclear materials present at the other SNL/NM facilities cannot be as readily used for radiological sabotage, and therefore their safeguards and security systems must be capable of preventing the actual removal of these materials from these facilities to prevent adversaries from utilizing them to threaten the national security and/or the health and safety of the public. Security systems at SNL/NM must also prevent classified information from falling into the hands of unauthorized persons and groups that do not have a legitimate access to this information.

To meet these protection needs, SNL/NM employs a multiple-layered protection strategy. These layers include: (1) physical barriers (fences, barbed wire, razor ribbon) and electronic intrusion detection systems at the

outermost boundaries of site security areas; (2) the buildings in which the assets are located and the intrusion detection systems, alarms, access controls, and search procedures associated with those buildings; and (3) the vaults, vault-type rooms, safes, and associated intrusion detection systems and administrative controls within those buildings in which the security interests are stored.

There are a number of administrative and electronic or mechanical protection measures employed at various points throughout these layers of protection. Administrative measures include the security clearances granted to personnel having access to various security interests, a human reliability program that employs random drug and alcohol tests and psychological testing for personnel with direct access to certain types and quantities of nuclear materials, a staff badging system to distinguish staff with security clearances from those without, numerous entry/exit points staffed by protective force personnel, and protocols such as “two person” rules which assure that at least two personnel are present when nuclear material is being handled in order to minimize the possibility that a single insider could commit a malevolent act undetected. Electronic/mechanical protection measures include access controls such as cipher locks, magnetic key cards and personal identification numbers, closed circuit television, and high security locks.

Finally, SNL/NM has a protective force that assesses and responds to security matters on site. The protective force includes a highly trained special response team for deployment to security emergencies.

3.0

Results of Past Safeguards and Security Reviews

The most recent self-assessments of the SNL/NM safeguards and security program by the Laboratory and surveys by the DOE Albuquerque Operations Office have been positive. Areas reviewed included program management, protection program operations, information security, nuclear material control and accountability, and personnel security. The results of this review by the Office of Security Evaluations correlate closely with those of the Office's most recent inspection of SNL/NM, where management programs, protection of special nuclear materials, and protection of information were all found to be performing acceptably.

4.0

Results of This Review

Positive Trends and Initiatives

All indicators considered during this review indicate that the special nuclear materials used and stored at SNL/NM are adequately protected against theft and radiological sabotage. Likewise, local vulnerability assessments, DOE operations office and area office surveys, and Laboratory self-assessments present a picture of protection effectiveness that is sufficient to meet protection needs. The site has also done a credible job of identifying potential radiological sabotage targets and applying appropriate measures to protect them. The site's conclusion that there is a low risk of serious consequences from a terrorist attempt to commit onsite radiological sabotage has been validated by the results of local testing and reviews. Classified and sensitive information at SNL/NM is also protected. The necessary managerial, administrative, and physical protection elements are in place to protect this information, including that processed and stored electronically. This conclusion also applies to the two sensitive compartmented information facilities, where the most sensitive classified assets at SNL/NM are kept.

Notable recent safeguards and security program initiatives at the DOE Albuquerque Operations Office and Kirtland Area Office include cross-training of the safeguards and security staffs, reorganization and consolidation of program functions to

eliminate duplication of effort, and the conduct of assistance reviews by the Albuquerque Operations Office to address specific areas of concern at area offices and contractor facilities. SNL/NM initiatives include the reduction and

consolidation of special nuclear material holdings, the installation of automated access control points, encryption of transmissions over computer networks, increased security training for Laboratory managers and staff, and the upgrade of physical security elements to enhance long-term system performance.

SNL/NM has also undertaken a variety of computer security initiatives. These include development of a formal integrated information service design review process and improvement of the security of networks used to transmit and process information.

An important positive attribute of the program is the stability and experience of the safeguards and security staff at SNL/NM. Staff retention rates are relatively high, obviating the need for frequent retraining and re-familiarization and allowing personnel to build on previous experience in accomplishing performance objectives. Similar stability is evident at the Albuquerque Operations Office and Kirtland Area Office. Another positive attribute is the overall strength of the SNL/NM self-assessment program, which allows the timely identification of individual deficiencies and systemic problems.

Issues Warranting Management Attention

While no significant weaknesses were noted in the implementation of the safeguards and security program at SNL/NM, DOE and contractor managers must be vigilant to ensure

that the program continues to provide effective protection in the future. The most significant issue facing these managers today is the integration of the safeguards and security program into the changing business environment at SNL/NM. Managers must balance the need to maintain effective security against the need to handle increased quantities of sensitive information, and to employ the capabilities of larger numbers of foreign scientists and technicians. Another example of the pressures inherent in the changing business environment is the desire to create a more open, campus-like research environment at Technical Area V, where the Sandia Pulse Reactor is located. This approach conflicts with traditional means of providing effective layered protection for nuclear materials. SNL/NM safeguards and security managers have initiated a study intended to identify new safeguards and security measures that will maintain the required levels of security while achieving, wherever possible, greater levels of openness.

A second management issue involves risk calculation and risk management. While the level of risk from an act of onsite radiological sabotage is low, there is still a need for a high level of management emphasis to ensure that all credible security risks are subjected to thorough and rigorous analysis. Likewise, potential modifications of the security systems associated with important special nuclear material targets, such as the Sandia Pulse Reactor complex, should receive similarly comprehensive analyses.